

The author wishes to acknowledge the financial support of the PPI/PPIC and expresses particular gratitude to Dr. José Espinosa, Director, PPI/PPIC Northern Latin American Program (INPOFOS).

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## India: Optimal Phosphorus Management Strategies for Wheat-Rice Cropping on a Loamy Sand

Researchers evaluated phosphorus (P) management strategies for a wheat-rice rotation, comparing seven P fertilizer treatments for wheat and rice, respectively. Results of the 1990 to 1997 study were as follows:

- Grain yields and seasonal P accumulation were highest with highest P fertilizer rates and remained stable in treatments with P applied to wheat.
- Phosphorus fertilization of rice increased P accumulation by rice, but did not consistently increase yields (because flooding decreased soil P sorption and increased P diffusion, resulting in a higher P supply to rice relative to wheat).
- Phosphorus adsorbed by ion-exchange resin capsules placed in situ was five times greater under rice than under wheat.

Researchers concluded that when both grain and straw were removed from fields, annual application of 32 kg P/ha to wheat, along with 15 kg P/ha to rice, was optimal for achieving short-term economic and long-term agronomic goals. They also pointed out that their results require further study at other sites, at higher rice yield levels and for different straw management. **BCI**

Source: Yadvinder-Singh, A. Dobermann, Bijay-Singh, K.F. Bronson, and C.S. Khind. 2000. *Soil Sci. Soc. Am. J.* 64: 1413-1422.

